IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	Yeh *et al.*	)
		)
Serial No.:	09/851,725	) Group Art Unit: 2144
		)
Filed:	May 8, 2001	) Examiner: Bengzon, Greg C.
		)
Title:	**Method and Apparatus for**	)
	Measuring Performance of	)
	a Multi-Computer Commu-	)
	nication Protocol on a	)
	Single Computer System	)
		)

APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Pursuant to the Notice of Appeal filed on August 14, 2006, Applicants (hereafter "Appellants") hereby submit this Appeal Brief in support of an Appeal from the Final Decision by the Examiner in the above-captioned patent application. Appellants respectfully request consideration of this Appeal by the Board of Patent Appeals and Interferences for allowance of the claims in the above-captioned patent application.

It is not believed that extensions of time are required beyond those that may otherwise be provided for in documents accompanying this Appeal. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and any

fees required therefore are hereby authorized to be charged to Deposit Account No. 02-2666.

I.   Real Party in Interest

The real party in interest is the assignee of the full interest in the invention, Intel Corporation of 2200 Mission College Boulevard, Santa Clara, California 95054-1549.

II.   Related Appeals and Interferences

To the best of Appellants' knowledge, there are no appeals or interferences related to the present appeal that will directly affect, be directly affected by, or have a bearing on the Board's decision in the instant appeal.

III.   Status of Claims

Claims 1-30 are pending in the application and were finally rejected in an Office Action mailed May 12, 2006. Claims 1-30 are the subject of this appeal. A copy of Claims 1-30 as they stand on appeal are set forth in the Claims Appendix (Appendix A).

IV.   Status of Amendments

A non-final Office Action was mailed on October 19, 2005. In response to the Non-Final Office Action, an amendment was filed on March 20, 2006. A final Office Action was mailed on May 12, 2006, in which no amendments were made in response to the final Office Action. Thus, the attached Claims appendix reflects the current status of the claims as filed on March 20, 2006.

V.   Summary of Claimed Subject Matter

The independent claims 1, 3, 9, 11, 17, and 27 relate respectively to methods, sets of instructions, and systems to measure performance of a multi-computer communication protocol on a single computer system. Method and set of instructions claims 1 and 9, respectively, include measuring performance of a multi-computer communication protocol on a single computer system (Specification page 5, lines 6-10; FIG. 1, blocks 21, 23, and 25), wherein said single computer system emulates a network configuration having a server and a client (Specification page 4, line 14 – page 5, line 5; FIG. 1, blocks 11, 13, 15, 17, and 19), and wherein measuring said performance of said multi-computer communication protocol on said single computer system includes executing server code on said single computer system (Specification page 5, lines 1-4; FIG. 1, block 17; Specification page 7, lines 5-18; FIG. 4, blocks 51-65); executiong client code on said single computer system (Specification page 5, lines 1-3; FIG. 1, block 13; Specification page 8, lines 7-18; FIG. 6, blocks 81-93); and measuring performance data for said single computer system (Specification page 5, lines 6-10; FIG. 1, blocks 21, 23, and 25; Specification page 9 line 8 – page 12, line 3; FIG. 7, blocks 101-118; FIG. 8, blocks 121-135).

Method and set of instructions claims 3 and 11, respectively, include operating a computer system under test as a server and a client to emulate a network configuration (Specification page 4, line 16 – page 5, line 10; FIG. 1, blocks 11-25; Specification page 5, line 11 – page 6, line 20; FIG. 2, block 31, items 33 and 35); executing server code on said computer system under test according to a multi-computer communication protocol (Specification page 5, lines 17-23; FIG. 2, item 33; Specification page 7, lines 5-18; FIG.

4, blocks 51-65); executing client code on said computer system under test according to said multi-computer communication protocol (Specification page 5, line 23 – page 6, line 5; FIG. 2, item 35; Specification page 8, lines 7-18; FIG. 6, blocks 81-93); and determining performance data for said computer system under test (Specification page 10, lines 4-17; FIG. 8, blocks 121-135).

System claim 17 includes a processor (FIG. 2, block 31a) to execute server code (FIG. 1, block 17; FIG. 2, item 33; FIG. 3, block 41; FIG. 4, blocks 51-65) and client code (FIG. 1, block 13; FIG. 2, item 35; FIG. 3, block 45; FIG. 6, blocks 81-93) on said computer system under test (FIG. 2, block 31) according to a multi-computer communications protocol, said computer system under test to determine performance data for said multi-computer communication protocol (FIG. 1, blocks 21, 23, and 25; FIG. 7, blocks 101-118; FIG. 8, blocks 121-135), said computer system under test operating as a server and a client to emulate a network configuration (Specification page 4, line 16 – page 7, line 4; FIG. 1, blocks 11-25; FIG. 2, block 31 and items 33, 35, and 37; FIG. 3, blocks 41, 43, 45, and 47).

System claim 27 includes a computer system under test (FIG. 2, block 31), said computer system having at least one processor (FIG. 2, block 31a) and a memory (FIG. 2, block 31b) for storing instruction code that when executed by said at least one processor (FIG. 2, block 31a) causes said computer system under test (FIG. 2, block 31) to: emulate a network configuration of a client and a server by executing server threads (Specification page 5, lines 1-4; FIG. 1, block 17; Specification, page 5, lines 17 – page 6, line 11; FIG. 2, item 33; Specification page 6, line 21 – page 7, line 1; FIG. 3, block 41; Specification page 7, lines 5-18; FIG. 4, blocks 51-65), client threads (Specification

page 5, lines 1-3; FIG. 1, block 13; Specification page 5, line 17 – page 6, line11; FIG. 2,

item 35; Specification page 7, lines 1-2; FIG. 3, block 45; Specification page 8, lines 7-

18; FIG. 6, blocks 81-93), and scheduler threads (Specification page 5, line 17 – page 6,

line 19; FIG. 2, item 37; Specification page 7, lines 2-4; FIG. 3, block 43; Specification

page 7, line 19 – page 8, line 6; FIG. 5, blocks 71-75), said server threads and said client

threads to transmit and receive data packets to and from said scheduler threads

(Specification page 6, line 19 – page 7, line 4; FIG. 3, blocks 41, 43, 45), said scheduler

threads to interface with a queue to temporarily store said data packets (Specification

page 6, line 12 – page 7, line 4; FIG. 3, block 43 and item 47), wherein said scheduler

threads to coordinate the communication of said data packets between said server threads

and said client threads (Specification page 6, line 12 – page 7, line 4; FIG. 3, blocks 41,

43, 47; Specification page 7, line 19 – page 8, line 6; FIG. 5, blocks 71-75).

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VI.   Grounds of Rejection to be Reviewed on Appeal

A.   Claims 1-6, 9-14, 17-20, and 29-30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,269,401 to Fletcher *et al.* (hereinafter "Fletcher") in view of U.S. Patent No. 5,636,371 to Yu.

B.   Claims 7, 15, and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,269,401 to Fletcher *et al.* (hereinafter "Fletcher") in view of U.S. Patent No. 5,636,371 to Yu, as applied to claims 1-6, 9-14, and 17-20 above, further in view of U.S. Patent Application Publication No. 2001/0056456 to Cota-Robles.

C.   Claims 8, 16, and 22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,269,401 to Fletcher *et al.* (hereinafter "Fletcher") in view of U.S. Patent No. 5,636,371 to Yu, as applied to claims 1-6, 9-14, and 17-20 above, further in view of U.S. Patent Application Publication No. 2001/0056456 to Cota-Robles.

D.   Claims 23-28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,269,401 to Fletcher *et al.* (hereinafter "Fletcher") in view of U.S. Patent No. 5,636,371 to Yu, as applied to claims 1-6, 9-14, and 17-20 above, further in view of U.S. Patent Application Publication No. 2001/0056456 to Cota-Robles.

VII.   Argument

A.   Claims 1-6, 9-14, 17-20, and 29-30 are patentable over U.S. Patent No. 6,269,401 to Fletcher *et al.* (hereinafter "Fletcher") in view of U.S. Patent No. 5,636,371 to Yu.

In the Final Office Action dated May 12, 2006, the Examiner states, with regards to independent claims 1, 3, 9, 11, and 17 that Fletcher substantially discloses the features and limitations in these claims. *Final Office Action* dated May 12, 2006, page 2. The Examiner also states that Fletcher "does not disclose a single computer system emulating a server and a client, said computer executing server code and also executing client code." *Id.* at 3. The Examiner further states that "Yu discloses ... of a virtual network mechanism that allows a single host system to emulate multiple server and client processes, allowing data to be passed between said processes, and executing server and client code in the same said host system. (Yu- Column 4 Lines 1-25, Column 5 Lines 1-25, Column 8 Lines 1-25)."

Three criteria must be met to establish a *prima facie* case of obviousness. MPEP 2143. There must be some suggestion or motivation, either in the references themselves or in the knowledge available to one of skill in the art, to combine the references. *Id.* There must be a reasonable expectation of success. *Id.* And, lastly, the prior art references must teach or suggest all the claim limitations. *Id.* "The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure." MPEP 2143 (*citing In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)).

The Examiner has failed to establish a *prima facie* case of obviousness for at least the following reasons: (1) the references of Fletcher and Yu do not suggest the combination or motivate one skilled in the art to combine them and (2) Fletcher and Yu combined do not teach or suggest all of the claim limitations of independent claims 1, 3, 9, 11, and 17.

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1.   The References of Fletcher and Yu Do Not Suggest the Combination or Motivate One Skilled in the Art to Combine Them

The present invention allows performance testing of a multi-computer communication protocol on a single computer system. The accurate performance measurements of a virtual network topology and software stack on a single computer system are accomplished by emulating a network topology on a single computer system having separate system threads (client, server, and scheduler threads) that enable intra-thread communications.

As indicated above, the teachings or suggestions to combine must be found in Fletcher and Yu, not in Appellants' patent application. Fletcher teaches monitoring communication performance *in a communication network comprising communication systems communicatively coupled to each other with communication equipment. Fletcher*, Abstract; col. 3, lines 23-26; col. 3, lines 35-38; col. 6, lines 35-40. Thus, the teachings of Fletcher disclose performance monitoring of physically existing distributed computer systems having at least one client computer system and at least one server computer system linked via a physical network topology as indicated by FIGs. 2-4.

Yu discloses "a method and system which enables application programs running [in] under control of different operating system components sharing a common communications protocol stack to utilize well-known ports for identifying like protocol application program services." *Yu*, col. 2, lines 49-54. Yu also discloses "a method and system for executing application programs which share a common communications protocol stack to utilize well-known port addresses for designating well-known

application programs accessible by client application programs on a remote host system which is transparent to the remote system and requires minimal change to the host system thereby facilitating debugging, modifying and maintaining of such application programs." *Yu*, col. 2, lines 55-64. The teachings of Yu do not appear to be concerned with the measurement of performance and do not mention use of a single computer system to virtualize or emulate an entire network of servers, clients, protocol, data, communication channels, etc.

Appellants submit that the Examiner has combined Fletcher and Yu based on Appellants' application disclosure. The Examiner's primary reference is Fletcher, which discloses monitoring communication performance in a communication network. The Examiner admits that Fletcher does not teach "a single computer system emulating a server and a client, said [single] computer executing server code and also executing client code." The Examiner then states that Yu teaches this feature. Appellants assert that the invention of Yu discloses executing programs that share a common communications protocol stack. Thus, there is nothing in the teachings of Fletcher (monitoring communication performance in a communication network) that would motivate one to combine it with the teachings of executing programs that share a common communications protocol stack as disclosed in Yu.

2.   Fletcher and Yu Combined Do Not Teach or Suggest All of the Claim Limitations of Independent Claims 1, 3, 9, 11, and 17

With regards to independent claims 1, 3, 9, 11, and 17, the Examiner states on page 3 of the Final Office Action that:

Fletcher discloses testing a computer system to be operated in a multi-computer environment, comprising: executing server code at a computer system under test; executing client code at said computer system under test; and [calculating] performance data for said computer system under test (See Fletcher Column 3 Lines 30-60). Furthermore, Fletcher discloses testing a computer system to be operated in a multi-computer environment, comprising: executing server code at a computer system under test according to a multi-computer communication protocol (Column 8 Lines 60-65); executing client code on said computer system under test according to said multi-computer communication protocol; and [calculating] performance data for said computer system under test operating as [one of] a server and a client. (See Fletcher Column 3 Lines 30-60, Figure 1 Column 5 Lines 15-50, Figure 2 Column 5 Lines 55-67).

Appellants respectfully disagree. Fletcher does not disclose testing a single computer system. Instead, Fletcher discloses monitoring communication performance in a communication network comprising communication systems communicatively coupled to each other with communication equipment. *Fletcher*, Abstract; col. 3, lines 23-26; col. 3, lines 35-38; col. 6, lines 35-40. Unlike the present invention which measures the performance of a multi-computer communication protocol using a single computer system under test, Fletcher is monitoring a computer system communication network to detect a problem and to permit a network manager to quickly identify the cause of the problem. *Fletcher*, col. 3, lines 7-10.

The Examiner, in setting forth this rejection, has acknowledged that Fletcher does not teach or suggest "a single computer system emulating a server and a client, said [single] computer executing server code and also executing client code." Final Office Action, p. 3, dated May 12, 2006. However, the Examiner has taken the position, unsupported by the references of record, that Fletcher can be modified to include such limitations without affecting the performance of the Fletcher system. There is no

teaching or suggestion of such a modification in Fletcher. In fact Fletcher teaches away from a single computer system emulating a server and a client because Fletcher teaches monitoring communication performance *in a communication network comprising communication systems communicatively coupled to each other with communication equipment. Fletcher*, Abstract; col. 3, lines 23-26; col. 3, lines 35-38; col. 6, lines 35-40. Fletcher teaches both a client computer system and a server computer system linked together by a physical communication network. *Fletcher*, col. 5, line 57 – col. 8, line 4; and FIGs. 2-4. Thus, contrary to the present invention, Fletcher uses separate computer systems for the client and the server and a physical communication network.

The Examiner further states, on pages 3-4 of the Office Action, that "Yu discloses a virtual network mechanism that allows a single host system to emulate multiple server and client processes, allowing data to be passed between said processes, and executing server and client code in the same said host system." Appellants respectfully disagree.

Yu discloses "a method and system for executing application programs which share a common communications protocol stack to utilize well-known port addresses for designating well-known application programs accessible by client application programs on a remote host system which is transparent to the remote system and requires minimal change to the host system thereby facilitating debugging, modifying and maintaining of such application programs." *Yu*, col. 2, lines 55-64. Yu does not appear to teach Appellants' element of "a single computer system emulating a server and a client, said computer executing server code and also executing client code. Instead, Yu teaches systems that share a single protocol stack on the same host system; multiple processing units running different copies of the same operating system and sharing the same protocol

stack; and different operating systems running on the same host system sharing the same protocol stack. According to the sections of Yu cited by the Examiner, Yu teaches that server processes are run on a remote system. *Yu*, col. 5, lines 8-25. The Examiner, on page 14 of the Office Action, states that "Yu discloses that there is no requirement that the emulated systems be located in a physically separate computer system (Yu – Column 5 Lines 15-20)." The Examiner further states that "Yu disclosed a single computer system emulating a server and a client."

Appellants respectfully disagree. The section of Yu cited by the Examiner, *Yu*, col. 5, lines 15-20, discloses an FTP services application program that permits the transfer of files from one system to another. *Yu*, col. 5, lines 15-16. In fact, the paragraph in which this section is found discloses an interactive user on a client system starting a login session on a remote system. *Yu*, col. 5, lines 12-13. The passage goes on to state that "[i]n operation, the interactive user invokes an FTP client process on the local system. The client process establishes a connection with an FTP server process on the remote system using TCP." *Yu*, col. 5, lines 18-22. Thus, the section of Yu cited by the Examiner does not disclose a single computer system emulating a server and a client. Instead, Yu discloses a local system and a remote system in which a client process is run on the local system and a server process is run on the remote system. *Yu*, col. 5, lines 8-26.

Thus, neither Fletcher nor Yu, separately or in combination, teach or suggest Appellants' invention as recited in independent claims 1, 3, 9, 11, and 17. For at least the reasons stated above, claims 1, 3, 9, 11, and 17, and the claims that depend therefrom

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(claims 2, 23-24, and 29; 4-8 and 30; 10 and 25-26; 12-16; and 18-22, respectively) are patentable over the cited references of Fletcher and Yu.

B.   Claims 7, 15, and 21 are patentable over U.S. Patent No. 6,269, 401 to Fletcher *et al.* (hereinafter "Fletcher") in view of U.S. Patent No. 5,636,371 to Yu, as applied to claims 1-6, 9-14, and 17-20 above, further in view of U.S. Patent Application Publication No. 2001/0056456 to Cota-Robles.

The Examiner, on page 6 of the Final Office Action, has rejected claims 7, 15, and 21 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,269,401 to Fletcher *et al.* (hereinafter "Fletcher") in view of U.S. Patent No. 5,636,371 to Yu as applied to claims 1-6, 9-14, and 17-20 above, further in view of U.S. Patent Application Publication No. 2001/0056456 to Cota-Robles.   Appellants respectfully traverse this rejection.

Claims 7, 15, and 21 depend from independent claims 3, 11, and 17, respectively, and are patentable over Fletcher and Yu for at least the reasons stated above. Furthermore, Cota-Robles does not teach or suggest the features missing from Fletcher and Yu.   For at least the reasons stated above, claims 7, 15, and 21 are patentable over Fletcher, Yu, and Cota-Robles.

C.   Claims 8, 16, and 22 are patentable over U.S. Patent No. 6,269,401 to Fletcher *et al.* (hereinafter "Fletcher") in view of U.S. Patent No. 5,636,371 to Yu, as applied to claims 1-6, 9-14, and 17-20 above, further in view of U.S. Patent Application Publication No. 2001/0056456 to Cota-Robles.

The Examiner, on page 7 of the Final Office Action, has rejected claims 8, 16, and 22 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,269,401 to Fletcher *et al.* (hereinafter "Fletcher") in view of U.S. Patent No. 5,636,371 to Yu, further in view of U.S. Patent Application Publication No. 2001/0056456 to Cota-Robles. Appellants respectfully traverse this rejection.

Claims 8, 16, and 22 depend from independent claims 3, 11, and 17, respectively, and are patentable over Fletcher and Yu for at least the reasons stated above. Furthermore, Cota-Robles does not teach or suggest the features missing from Fletcher and Yu. For at least the reasons stated above, claims 8, 16, and 22 are patentable over Fletcher, Yu, and Cota-Robles.

D.   Claims 23-28 are patentable over U.S. Patent No. 6,269,401 to Fletcher *et al.* (hereinafter "Fletcher") in view of U.S. Patent No. 5,636,371 to Yu, as applied to claims 1-6, 9-14, and 17-20 above, further in view of U.S. Patent Application Publication No. 2001/0056456 to Cota-Robles.

The Examiner, on pages 9-10 of the Final Office Action, has rejected claims 23-28 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,269,401 to Fletcher *et al.* (hereinafter "Fletcher") in view of U.S. Patent No. 5,636,371 to Yu, further in view of U.S. Patent Application Publication No. 2001/0056456 to Cota-Robles. Appellants respectfully traverse this rejection.

Claims 23-24 and 25-26 depend from independent claims 1 and 9, respectively, and are patentable over Fletcher and Yu for at least the reasons stated above. Furthermore, Cota-Robles does not teach or suggest the features missing from Fletcher

and Yu. For at least the reasons stated above, claims 23-24 and 25-26 are patentable over Fletcher, Yu, and Cota-Robles.

Independent claim 27 includes similar elements as recited in independent claims 1, 3, 9, 11, and 17, and thus, is patentable over Fletcher and Yu for at least the reasons stated above. Furthermore, Cota-Robles does not teach or suggest the features missing from Fletcher and Yu. For at least the reasons stated above, claim 27, and the claim that depends therefrom (claim 28) are patentable over Fletcher, Yu, and Cota-Robles.

Thus, for at least the foregoing reasons, Appellants respectfully submit that independent claims 1, 3, 9, 11, 17, and 27, and the claims that depend therefrom (claims 2, 23-24, and 29; 4-8 and 30; 10 and 25-26; 12-16; 18-22; and 28), respectively, are patentable over Fletcher and Yu or Fletcher, Yu, and Cota-Robles separately or in combination. Appellants respectfully submit that the Examiner erred in rejecting claims 1-30 based on Fletcher and Yu or Fletcher, Yu, and Cota-Robles.

Conclusion

In view of the foregoing, favorable reconsideration and reversal of the rejections is respectfully requested. Early notification of the same is earnestly solicited. If there are any questions regarding the present application, the Examiner and/or the Board is invited to contact the undersigned attorney at the telephone number listed below.
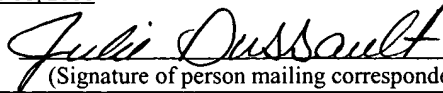
Respectfully submitted,

Intel Corporation

/Crystal D. Sayles, Reg. No. 44,318/

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Appendix A: Claims Appendix

1. A protocol performance test method, comprising:

measuring performance of a multi-computer communication protocol on a single computer system, wherein said single computer system emulates a network configuration having a server and a client, and wherein measuring said performance of said multi-computer communication protocol on said single computer system includes,

       executing server code on said single computer system;

       executing client code on said single computer system; and

       measuring performance data for said single computer system.

2. The method of claim 1 wherein said server code and said client code include a number of threads, the method further comprising:

tracking an execution time for each of said threads by a processor in said single computer system; and

tracking a number of transactions completed between the execution of said server code and the execution of said client code wherein said performance data is based on said number of transactions completed over a period of time.

3. A protocol performance test method, comprising:

operating a computer system under test as a server and a client to emulate a network configuration;

executing server code on said computer system under test according to a multi-computer communication protocol;

executing client code on said computer system under test according to said multi-computer communication protocol; and

determining performance data for said computer system under test.

4. The method of claim 3 wherein said server code and said client code include a number of threads, the method further comprising:

tracking an execution time for each of said threads by a processor in said computer system under test.

5. The method of claim 4 wherein said communication protocol defines transactions between said server and said client, the method further comprising:

tracking a number of transactions completed between the execution of said server code and the execution of said client code.

6. The method of claim 5 wherein said performance data is based on said number of transactions completed over a period of time.

7. The method of claim 6 wherein said performance data is based on said number of transactions completed over said period of time modified by a scaling factor.

8. The method of claim 7 wherein said scaling factor comprises a total execution time for both client and server threads divided by one of an execution time for said server threads and an execution time for said client threads.

9. A set of instructions residing in a storage medium, said set of instructions capable of being executed by a processor to implement a protocol performance test method, the method comprising:

measuring performance of a multi-computer communication protocol on a single computer system, wherein said single computer system emulates a network configuration having a server and a client, and wherein measuring said performance of said multi-computer communication protocol on said single computer system includes,

executing server code on said single computer system;

executing client code on said single computer system; and

measuring performance data for said single computer system.

10. The set of instructions of claim 9, wherein said server code and said client code include a number of threads, the method further comprising:

tracking an execution time for each of said threads by a processor in said single computer system; and

tracking a number of transactions completed between the execution of said server code and the execution of said client code wherein said performance data is based on said number of transactions completed over a period of time.

11. A set of instructions residing in a storage medium, said set of instructions capable of being executed by a processor to implement a protocol performance test method, the method comprising:

operating a computer system under test as a server and a client to emulate a network configuration;

executing server code on said computer system under test according to a multi-computer communication protocol;

executing client code on said computer system under test according to said multi-computer communication protocol; and

determining performance data for said computer system under test.

12. The set of instructions of claim 11 wherein said server code and said client code include a number of threads, the method further comprising:

tracking an execution time for each of said threads by a processor in said computer system under test.

13. The set of instructions of claim 12 wherein said multi-computer communication protocol defines transactions between said server and said client, the method further comprising:

tracking a number of transactions completed between the execution of said server code and the execution of said client code.

14. The set of instructions of claim 13 wherein said performance data is based on said number of transactions completed over a period of time.

15. The set of instructions of claim 14 wherein said performance data is based on said number of transactions completed over said period of time modified by a scaling factor.

16. The set of instructions of claim 15 wherein said scaling factor comprises a total execution time for both client and server threads divided by one of an execution time for said server threads and an execution time for said client threads.

17. A computer system under test to be operated in a multi-computer environment, comprising:
a processor to execute server code and client code on said computer system under test according to a multi-computer communication protocol, said computer system under test to determine performance data for said multi-computer communication protocol, said computer system under test operating as a server and a client to emulate a network configuration.

18. The computer system of claim 17 wherein said server code and said client code includes a number of threads, said computer system under test to track an execution time for each of said threads by said processor.

19. The computer system of claim 18 wherein said multi-computer communication protocol defines transactions between said server and said client, said computer system under test to track a number of transactions completed between the execution of said server code and the execution of said client code.

20. The computer system of claim 19 wherein said performance data is based on said number of transactions completed over a period of time.

21. The computer system of claim 20 wherein said performance data is based on said number of transactions completed over said period of time modified by a scaling factor.

22. The computer system of claim 21 wherein said scaling factor comprises a total execution time for both client and server threads divided by one of an execution time for said server threads and an execution time for said client threads.

23. The method of claim 1, wherein said server code comprises a number of server threads, said client code comprises a number of client threads, and wherein said method further comprises executing scheduler code, said scheduler code comprising a number of scheduler threads, said scheduler threads for coordinating communication of data between said client threads and said server threads.

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24. The method of claim 23, wherein executing said scheduler code includes interfacing with a queue to store data packets to be transferred to a client thread or a server thread.

25. The set of instructions of claim 9, wherein said server code comprises a number of server threads, said client code comprises a number of client threads, and wherein said method further comprises executing scheduler code, said scheduler code comprising a number of scheduler threads, said scheduler threads for coordinating communication of data between said client threads and said server threads.

26. The set of instructions of claim 25, wherein executing said scheduler code includes interfacing with a queue to store data packets to be transferred to a client thread or a server thread.

27. A system for performing protocol performance testing, comprising:
   a computer system under test, said computer system having at least one processor and a memory for storing instruction code that when executed by said at least one processor causes said computer system under test to:
   emulate a network configuration of a client and a server by executing server threads, client threads, and scheduler threads, said server threads and said client threads to transmit and receive data packets to and from said scheduler threads, said scheduler threads to interface with a queue to temporarily store said data packets, wherein said scheduler threads to coordinate the communication of said data packets between said server threads and said client threads.

28. The system of claim 27, further comprising sockets, wherein said data packets from said server threads and said client threads are transmitted to said sockets and said scheduler threads retrieve said data packets from said sockets to transfer said data packets to the queue.

29. The method of claim 1, wherein the performance data for said single computer system is representative of said single computer system acting as a server or said single computer system acting as a client.

30. The method of claim 3, wherein the performance data for said computer system under test is representative of said computer system under test acting as a server or said single computer system under test acting as a client.

Appendix B: Evidence Appendix

No evidence has been submitted in the present appeal.

Appendix C: Related Proceedings Appendix

There are no related proceedings.